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Overview of the Industry File Index System

(U.S.) Environmental Protection Agency
Washington, DC

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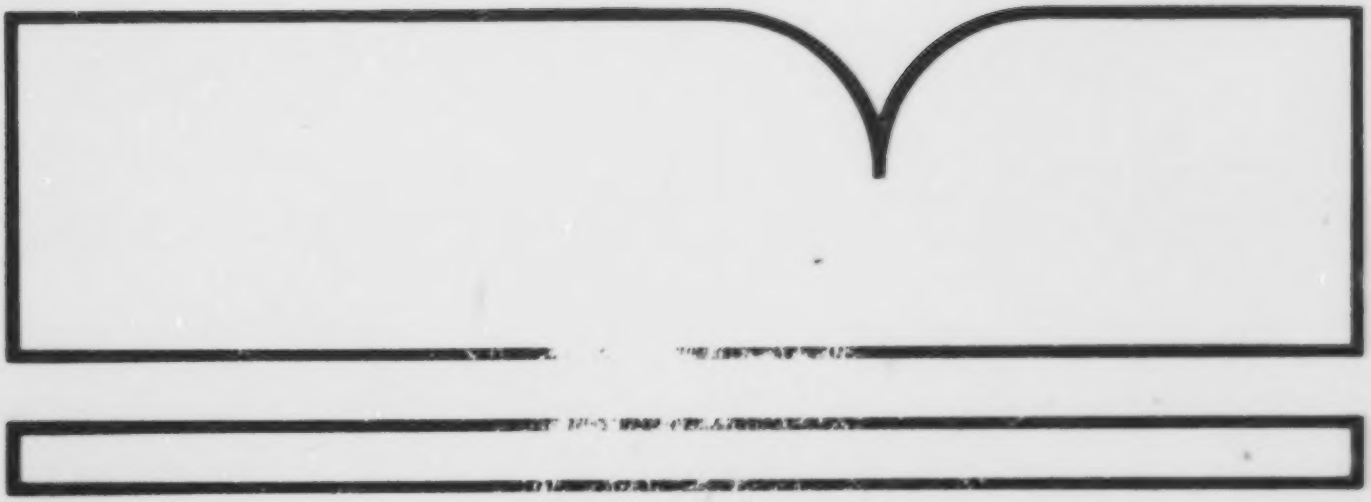

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This document provides data base users with a description of a new on-line data file being developed. Its purpose, intended uses and data elements are discussed and sample printouts using the UNIVAC System 2000 are provided.

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Toxic Integration Information Series

PB84-102870

Overview of the Industry File Index System

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Chemicals Implicitly Regulated: There are four general classes of "Chemicals Implictly Regulated."

1. Chemicals described as implicitly regulated (in a list or tabular form) in a development document or in a an appendix to the relevant Federal Register notice;

2. Chemicals known to be regulated by indicator pollutants or parameters (e.g., various heavy metals used in an industry may be implicitly regulated if an indicator such as pH is explicitly regulated); Within this class, the decision rules were applied:

   (a) If total suspended solids are explicitly regulated, then any compounds known to be in solid form in process wastewaters are considered implicitly regulated. This may in some cases include substances, such as oil and grease (where these are not also explicitly regulated), that are poorly soluble in water but are not necessarily in solid form.

   (b) If pH is explicitly regulated, then any inorganic compound with "acid" or "base" in its name or known to be an acid or base (e.g., oleum, sodium hydroxide) is considered implicitly regulated. This does not apply to organic acids.

   (c) If oil and grease are explicitly regulated, then any compound obviously an oil and grease and known to be found in process wastewaters is considered implicitly regulated.

OVERVIEW OF THE INDUSTRY FILE INDEX SYSTEM

Prepared and Edited by:

Daryl Kaufman, M.S.
Donn Viviani, Ph.D.

Chemical Coordination Staff
Office of Pesticides and Toxic Substances
Environmental Protection Agency
May, 1983

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OTHER PUBLICATIONS IN THE
TOXICS INTEGRATION POLICY SERIES:

State Administrative Models for Toxic Substances Management (July 1980) EPA-560/13-80-018; PB81-14373

State Integrated Toxics Management: Fact and Challenge (July 1981) EPA-560/TIPS-81-001; PB81-242406

Chemical Substances Designation (December 1981) EPA-560/TIIS-82; PB83-130294

OTHER PUBLICATIONS IN THE
TOXICS INTEGRATION INFORMATION SERIES:

EPA Chemical Activities Status Report - 1st Edition (June 1979) EPA-560/13-79-003

EPA Chemical Activities Status Report - 2nd Edition (December 1980) EPA-560/13-80-040(a), PB81-176414; EPA-13-80-040(b), PB81-176422

EPA Chemical Activities Status Report - 3rd Edition (June 1982) EPA-560/TIIS-82-002a,-002b

Directory of Federal Coordinating Groups for Toxic Substances - 1st Edition (June 1979), 2nd Edition (March 1980) EPA-560/13-80-008; PB80-177314

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Chemical Selection Methods: An Annotated Bibliography (November 1980) EPA-560/TIIS-80-001; PB81-241481

TSCA Status Report for Existing Chemicals - Volume 1, Issue 2 (July 1980) EPA-560/13-80-033

TSCA Status Report for Existing Chemicals - Volume 2, Issue 2 (July 1981) EPA-560/TIIS-81-004

Chemical Information Resources Handbook (January 1981)
(EPA-560/TIIS-81-002; PB82-225657

Measuring and Comparing the Cost-Effectiveness of EPA Regulatory Efforts to Control Toxics-Related Health Risks, Vol. 1: Feasibility Study (June 1981)
EPA-560/TIIS-82-007

Toxic Substances Control Act Grants to States (July 1981)
EPA-560/TIIS-81-003; PB81-232969

TSCA Chemicals in Commerce Inventory: Regional and States Perspectives (August 1981) EPA-560/TIIS-81-005

Chemical Substances Designation (December 1981)
EPA-560/TIIS-82-003, PB83-130294; -004, PB83-130302; -005, PB83-130310; -006; PB83-130328

State Integration Toxics Management: 18 Profiles
(December 1982) EPA-560/TIIS - 81-005-1

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1. INTRODUCTION

1.1 What Is The IFIS?

The Industry File Information System (IFIS) is an automated guide to EPA's chemical regulations as viewed from an industry perspective. The IFIS enables the user to determine, for any particular industry, which chemicals are used or produced, whether and how these chemicals are regulated, and, if regulated, under what authority.

1.2 Why Do We Need An IFIS?

EPA's seven major legislative authorities (CAA, CERCLA, CWA, FIFRA, SDWA, TSCA and RCRA) were each enacted to correct different types of environmental problems. The regulations developed under these acts each regulates different "things"; i.e. chemicals, chemical classes, surrogates, uses, processes, process categories, and entire industries. These differences in (1) how regulations are structured, and (2) "what things are called," under different authorities complicate the task of organizing regulations by chemical and by the industry affected. Simple, yet important questions, such as "what regulations affect industry X?" or "in what industries is chemical Y regulated?" could not be answered without a major research effort.

In the IFIS, all the terminology peculiar to individual regulations e.g., surrogates, VOC, etc., are reduced to their component chemicals as are processes and uses. The resulting 5,000 plus chemical entries are grouped under 63 industry headings. This enables the user to quickly

assess regulatory requirements for a given industry, the industries which are regulated for a particular chemical, and other questions important for regulatory development review and analyses.

2. DESCRIPTION OF INDUSTRY FILE INDEX SYSTEM

2.1 Development

All EPA regulatory support materials that could be obtained (development documents, background documents, etc.) from the respective program offices--water, air, hazardous waste--for these industry-based regulations were reviewed. From these documents, specific pieces of information relevant to chemicals and their relationship to the particular industry were extracted [Chemical Abstract Service (CAS) registry number, chemical uses, regulatory status, industry (industry subcategories, control technologies required by the regulation)] for inclusion in the data base. Regulatory information (authority and sections, status--final or proposed) and general information, such as affected media and precision of quantification (empirical or estimated) are also provided. A large descriptor field for each chemical will include emissions data when available and other relevant chemical or industry information. These categories are described in more detail in section 2.3.

2.2 Capabilities

The various combinations of these pieces of information will enable the user to address four basic questions:

1. What chemicals are associated with Industry X?

2. How is Chemical Y used in Industry Y?

3. What industries use Chemical Y?

4. What industry-specific regulations are proposed or in effect for Industry X or Chemical Y? Users should be aware that only regulations for specific industries will be included -- not all Agency regulations.

Users will be able to refine their requests for combinations of specific industries, chemicals, and uses. Because subcategories vary from industry to industry, specific information for subcategories will be available for each industry once the user is on-line and retrieving information for that industry.

The data base can be accessed through the EPA UNIVAC in RTP via the System 2000 Data Base Management System. With this DBMS, the IFIS does not automatically provide the user with all the information it contains on a certain chemical, industry, or regulation unless it is specifically requested in the retrieval command. Users gain access to the various categories of information, described in detail below, through "component numbers"; each category of information is assigned its own component number (see Section 3). This is a characteristic of the design of System 2000.

The IFIS uniquely links together chemical/regulatory/industry-specific information for any industry for which EPA has proposed or promulgated regulations. Other data bases may be used to supplement the chemical, regulatory, and/or industry information which IFIS provides.

For example, the IFIS allows the user to retrieve chemical information, such as chemical use data, by both industrial subcategory and regulatory status. To learn about the toxicological effects associated with the chemicals of interest (information which IFIS does not contain), the user can turn to the RTECS or Carcinogenesis Bioassay Data System data bases.

Regulatory information can be searched by industry on the IFIS. This can be accomplished by using a designated Industry Code (contained in the Users Guide) and chemical (CAS or SEQ number). The IFIS, for instance, can identify proposed, interim final, and final EPA-issued regulations of chemicals for any regulated industry and its subcategories. The IFIS can also indicate whether the chemicals are explicitly regulated, implicitly regulated, unregulated, or are of unknown regulatory status, for each industry and its subcategories identified in a regulation.

In contrast to the IFIS, the Chemical Regulations and Guidelines System (CRGS) data base does not include data on proposed regulations. Chemical Regulations and Guidelines System however, does provide the user with more detailed descriptions of final regulations than does the Industry File. Similarly, a user seeking to locate an Advanced Notice of Proposed Rulemaking on a chemical or industry would not find it in IFIS, but could consult with the Federal Register Search System (FRSS) data base.

Industry information, such as what industries and their subcategories produce Chemical X or are regulated under the authority of Statute Y, can also be obtained from the IFIS. However, IFIS will not specify manufacturers by the chemicals they produce. For this information, users could examine Chemical Plant Data, Directory of Chemical Producers, Synthetic Organic Chemicals: United States Production and Sales (SYNORG) publication, the Industrial Press Chemicals (IPC) Data Base, or Organic Chemical Producers Data Base computerized systems.

2.3 Categories of Data Elements

The following is a description of the categories of background information that have been extracted from regulatory development documents and other sources for inclusion in the IFIS. Before describing these categories, a few caveats are warranted. The primary information sources are regulatory development documents which are not intended to provide complete chemical descriptions of American industry. The list of chemicals used in a specific industry cannot then, in most cases, be comprehensive. Indeed, it is apparent that for many industries the list of chemicals is far from complete. Also, some chemicals listed consist of complex mixtures or generic categories not ordinarily thought of as chemicals per se. Examples include copper-bearing scrap, pH, and metal oxides.

- Industry Code: The Industry Code number is taken from a list provided by EPA. The EPA project officer listed alphabetically all industries for which regulations or development documents were available and assigned them numbers (in sequence). This eliminated the overlap in the industry names used by the various program offices and the SICs. The latter are available, but searches cannont be conducted using them.

- Industry Name (Segment): Self-Explanatory.

- Industry Subsegment: The industry designated in the development documents--e.g., "Iron and Steel Manufacturing." Designations of industry segments and subcategories may vary in different media. For example, Clean Water Act regulations are directed at specific point

source categories identified principally by their products, (e.g., gum and wood chemicals, petroleum refining); whereas air regulations, such as new source performance standards, are directed at different pollution sources within point source categories and at processes used in several industries (e.g., incinerators, stationary gas turbines.)

- Chemical Name and CAS Registry Number: CAS Registry Numbers have been used to identify as many chemicals as possible using the TSCA inventory, the most recent EPA Chemical Activities Status Report, the Registry of Toxic Effects of Chemcial Substances, CHEMLINE (an on-line data base), and the Chemical Abstracts Substance Index. In cases where multiple CAS Registry Numbers appear in the same source document--e.g., if a chemical has multiple molecular formulas--the lowest number will be used. For substances not having CAS Registry Numbers, existing or new sequence numbers (SEQ) have been arbitrarily assigned.

- Element Code: This field has been established to permit users to search an industry for all known forms of metals used in that industry. A major shortcoming of the development documents, and some of the regulations, is that certain chemicals are identified in their elemental state (e.g., lead, iron), while the industries in question use non-elemental forms of these chemicals (e.g., lead sulfate, iron hydroxide, etc.). In most instances only the CAS number for the elemental form has been included unless information is available on the substances actually used. To alleviate this problem, an element

code (the Periodic Chart symbol) will be coded into the data base for metals and their salts, along with their respective CAS Registry Numbers. This will enable searches to be be conducted for those compounds with one entry (e.g. Fe for iron and iron salts) rather than using all the different CAS Registry Numbers.

o Chemical Regulatory Status: This indicates whether the chemical is explicitly, implicitly, or not regulated, or of unknown regulatory status. Some chemicals may be explicitly regulated in one subcategory, implicitly regulated in another, and not regulated in a third, all in the same industry. Because a chemical is not listed more than once per industry per regulation, such chemicals are listed in the "regulated" chemicals section and omitted from the "not regulated" section. In situations such as that just described, this decision-rule may tend to skew the data slightly.

Chemicals Explicitly Regulated: These chemicals include only those explicitly noted in the applicable regulation or proposed regulation. Any contradictions between the regulation (regardless of status) and lists of chemicals recommended for regulation in the development document are resolved in favor of the former. Thus, if a chemical is recommended for regulation in the development document, but is not found in the corresponding regulation, the chemical will not be included under "Chemicals Explicitly Regulated." Conversely, a chemical listed in a regulation but not necessarily recommended for regulation in the development document will be listed in this column.

This category also includes chemicals named in the title of a regulation that imposes a requirement of, for example, "no discharge permitted." All other chemicals associated with an industry, subcategory, or process governed by such a regulation are to be included under the "chemicals implictly regulated" category. For example, in a hypothetical Uranium-238 manufacturing subcategory, in which no discharge of process wasterwater is permitted, U-238 will be explicitly regulated, while all other chemicals involved in this process and found in the effluent will be implicitly regulated.

If a constituent of an inorganic compound is explictly regulated, then the whole compound is considered explicitly regulated. For instance, if "lead" is explicitly regulated, various lead salts known to be used in the industry are considered explicitly regulated. This principle does not apply to organic compounds. For example, if benzene is regulated, chlorobenzene will not necessarily be considered explicitly regulated.

With respect to an industry subcategory's "regulatory burden," the column referring to explicitly regulated chemicals may be somewhat misleading. If, for example, a chemical is subject to an effluent limitation for one only process in a particular industry subcategory, that chemical is listed as explicitly regulated, even though that subcategory may contain a multitude of processes for which the chemical in question may be unregulated. Thus, for a particular industry, the overall regulatory burden may appear to be greater than it actually is.

(d) If total organic carbon is explicitly regulated, then any organic compound known to be present in the effluent, and not otherwise explicitly regulated or excluded from regulation, is considered implicitly regulated.

(e) If five-day biological oxygen demand (BOD^5) is explicitly regulated, then chemicals known to be biodegradable are considered implicitly regulated.

3. Chemicals used in an industry (and which have been detected in process wastewaters) where the regulation or proposed regulation calls for, e.g., "no discharge of process wastewaters," without specifically designating any pollutants; and

4. Chemicals that are neither explicitly regulated nor excluded from regulation, which are detected in significant quantitites at more than one source.

Chemicals Not Regulated: These chemicals include those designated in the Federal Register announcement to be excluded from regulation. Generally, such exclusions are based (in the case of effluent limitations) on the Natural Resources Defense Council Settlement Agreement. Example of such specific exclusions include:

1. chemicals detected in "environmentally insignificant" amounts in effluent wastewaters;

2. chemicals detected at only one location; and

3. chemicals whose emission levels cannot be reduced further by current treatment techniques.

Also included in this category are chemicals emitted to other media if such chemicals are not emitted to the medium of interest. For example, if a regulation covers wastewater effluent, air emissions of chemicals thought to be absent from effluent water are considered not regulated by the regulation of interest, even though such air emissions may be subject to another regulation.

Priority pollutants not detected in effluent wastewaters and not known to be used in a given industry are not included in this (or any other) category.

There has been some difficulty classifying chemicals used in some industries (particularly non-priority pollutants) with regard to whether they should fall into this category or "Chemicals Implicitly Regulated." Generally such chemicals have been put into this category in order not to overstate regulatory burdens. There may, however, be some cases of misclassification.

Chemical of Unknown Regulatory Status: This category includes chemicals whose regulatory status is not ascertainable from available documents. For example, chemicals that would obviously be implicitly regulated under Clean Water Act regulations, if found in the waste stream, have been put in the "unknown" category if there is no evidence (e.g., sampling data or process descriptions) that such chemicals have in fact been detected in the waste stream. Since extensive waste stream sampling has been done

only for the 129 priority pollutants, the unknown category will generally include non-priority pollutants.

- SIC Code(s): The Standard Industrial Classification (SIC) Codes of the U.S. Office of Management and Budget refer to the particular industry segment. Often, more than one four-digit SIC code applies to each industry segment being regulated. However, if more than one subcategory exists for an industry, individual SIC code numbers will not necessarily correspond to the individual subcategories. An SIC code number may therefore overlap several subcategories, and vice versa.

- Subsegment Code: The industry subsegment code number taken from a list provided by EPA.

- Authority: The popular name of the legislation from which EPA derives its authority to promulgate regulations (e.g., Clean Water Act).

- Regulation Status: Proposed, interim final, or final.

- Section: The sections of the legislation under whose authority the regulation has been promulgated.

- Description: The title of the regulation as it is found in the Federal Register.

- Precision of Quantification: The methodology employed by EPA or its contractors in developing support documentation for the control measures designated in the regulation, and indicating whether the precision of quantification is "estimated" or "empirical".

- Media: The media directly affected by the regulation. For example, for regulations promulgated under the Clean Water Act, the medium directly affected is surface water, even though control measures undertaken may have an effect on air pollution and solid waste as well.

- Type of Technology: This lists the generic control technology acronyms found in the regulation. Regulations promulgated under legislation other than the Clean Water Act or Clean Air Act may not contain any such labelling of control technology. For the Clean Water Act this category will include BPT (best practicable technology), BAT (best available technology), BCT (best conventional technology), NSPS (new source performance standards), PSNS (pretreatment standards for new sources), and PSES (pretreatment standards for existing sources). The only such industry-specific technology listed under the Clean Air Act will be NSPS (new source performance standards). Technologies specified for a particular chemical will be used separately for that chemical (see Technology on P. 18).

- Industrial Subcategory: Designations based generally on an EPA analysis of industrial structure and processes in order to subdivide the industry segments for regulatory purposes. Subcategories are listed in both the regulations and development documents, but may or may not be discussed separately in the latter.

Formal industry subcategorization does not apply across media under different regulatory authorities. Industry subcategories under the Clean Air Act, therefore, do not easily correspond to those developed under the Clean Water Act, the Resource Conservation and Recovery Act, etc.

EPA may revise its analysis of what makes regulatory sense with respect to subcategorization. When this happens, the number of subcategories in an existing (e.g., BPT) regulation may be different from that in a proposed (e.g., BAT) regulation. For example, iron and steel manufacturing BPT effluent guideline limitations included 26 subcategories, while the promulgated BAT regulations include only 12.

A number precedes each subcategory name. These numbers are used to identify subcategories associated with particular control technologies and uses for a particular chemical. For subcategories in which no discharge of process wastewater is allowed, this will be noted parenthetically after the name of the subcategory--i.e., "(NDA)" or "(NDA for BPT, PSNS)".

- Subcategory Number: This number (referenced to the previous listing of industrial subcategories) indicates which subcategories are affected by particular control technologies. While it would be desirable to have these subcategories also correspond to industrial uses as well, use information in the development and other regulatory documents is often unavailable in a subcategory-specific form.

- References: Reference materials will be noted parenthetically in the "uses," "technologies" and "descriptor" columns, adjacent to the information extracted from each source. References will each be assigned a bibliographic number for use in these fields. The notation will be as follows: (R7:23-26), where R7 refers to the seventh reference on the overall bibliography, and 23-26 indicates the relevant pages from that reference.

  Occasionally a chemical use may not be specificed in a support document, but its use in a given industry is relatively certain. In such cases the use will be listed, followed by the letter "J" in parentheses.

- Technology: This refers to the type of technology mandated by the regulation or proposed regulation for a particular chemical. Examples include BAT, BPT, BCT, NSPS, PSES, and PSNS. Except where otherwise indicated, this information is generally given only for explicitly regulated chemicals. This information is listed for implicitly regulated chemicals only where it is unequivocally clear which technology is mandated. For chemicals not regulated or of unknown regulatory status, such information is irrelevant.

  The technology mandated consists of generic control standards, without reference to any specific control technology. For regulations implementing legislation other than the Clean Water Act, there may not be standards whose names can be conveniently abbreviated in an acronym. Thus, for example, under RCRA, generators of hazardous wastes must follow the regulations of 40 CFR Part 262, but no

specific generic control technology is described under it. Thus, for regulations promulgated under statutes other than the Clean Air and Clean Water Acts, the technology category may be left blank.

In some instances of effluent guidelines and pretreatment standards, the regulation may state "No limitation" on discharges of particular chemicals. In such cases, the technology will be considered to be inapplicable to the chemical in question and will not be listed.

- o CFR Citation: The title part of the Code of Federal Regulations and the date of the CFR consulted; in most cases this will be July, 1981. CFR citations are included for proposed regulations even though they are not yet formally a part of the code. (In these cases, the date of the CFR consulted cannot be included).

- o FR Citation: The Federal Register citation(s) by volume and page number for each regulation. A final regulation may have multiple FR citations because of revisions. The title of the regulation, having been listed under the category "Description" (above), will not be listed again here.

- o Reference Citation: The title(s) and document number(s) of references used to extract data.

- o Descriptor: This category provides a variety of information about a chemical or pollutant. For example, Clean Water Act pollutants may be described as conventional, toxic, or non-conventional. Chemicals in other media are subject to other EPA classification schemes. Other data are also included since this is considered to be a "catch-

all" category. An example of such data is a designation by one or two letter codes identifying why a particular priority pollutant is not to be regulated under proposed BAT regulations, such as "NT" - not treatable by available control technology.

Other abbreviations include:

A = artifact

UO = unique occurrence

X = effectively controlled by other guidelines

NT = not treatable by current methods

ND = no standard definition of the pollutant

EI = environmentally insignificant

BL = below nominal detection limits

C = conventional pollutant (CWA)

NC = nonconventional pollutant (CWA)

T = toxic pollutant (CWA) or toxic waste (RCRA)

CR = criteria pollutant (CAA)

NCR = noncriteria pollutant (CAA)

RCRA = source-specific codes (e.g., "K052" - leaded tank bottoms from the petroleum refining industry).

With respect to Clean Water Act pollutants, EPA's classifications have been somewhat expanded to suit the needs of this data base.

- Conventional pollutants--These include total suspended solids, pH, oil and grease, BOD^5, and fecal coliforms.

- Toxic pollutants--These include the 129 CWA priority pollutants as well as compounds containing inorganic components from the list of 129. For example, lead and mercury are both toxic pollutants, thus all inorganic compounds of lead and mercury are also in this category. This inclusionary rule does not apply to organics on the priority pollutant list.

- Nonconventional pollutants--These include all pollutants that do not fall within either of the above categories. Examples of such pollutants include chemical oxygen demand, total organic carbon, total dissolved solids, sulfides, chlorides, etc. Also included in this category are derivatives of organic priority pollutants. The "nonconventional" group is by far the largest of the three pollutant groups insofar as the categories of "chemicals not regulated" and "chemicals of unknown regulatory status" are concerned, in part because many chemicals within the latter categories are used in industry but are not necessarily pollutants. If it is not clear whether particular chemicals are present in the waste stream, they have been generally classified in the "Chemicals of Unknown Regulatory Status" category.

The descriptor column also includes reuse/release information concerning the immediate environmental fate of various chemicals, whenever such information is available. There are very few data--either qualitative or quantitative--on recycling or reuse of specific chemicals. Most such information is process and not chemical specific, and thus cannot be incorporated.

Where chemical-specific information concerning emissions to other media is available, it will be included in the descriptor category. However, such information is sparse, and is generally qualitative and process-specific, not quantitative and chemical-specific. For example, it may be indicated in a Clean Water Act document that chromium-containing sludges are used as land fill. Rarely will there be quantitative emissions estimates.

o Uses: Nine code letters are used for chemical uses:

F = feedstock

I = intermediate

B = byproduct

C = contaminant

P = product

S = solvent

O = other (with the specific use listed)

U = unknown or unavailable

N = not applicable.

Byproducts are distinguished from contaminants (insofar as this is possible) in that the former are changed by the industrial process(es), while the latter remain unchanged. The "U" category will be used for chemicals noted in the development document and/or the regulation whose use(s) cannot be readily ascertained. More often than not, subcategory-specific uses are not identified in the development documents or other references. However, where chemical uses are identified with a

particular subcategory, this will be indicated by a parenthetical notation of the latter (by number) following the use designation.

The "N" code will be used for pollution parameters that have no industrial use per se, such as pH, BOD^5, COD and total organic carbon.

For chemicals regulated concurrently in different media, or for those currently subject to regulation and which are included in proposed regulations, chemical uses may be listed only once (e.g., in a document for a proposed Clean Water Act regulation, but not in the document concerning the corresponding existing regulations). In cases where the use category is left blank, other documents containing such information will be cross-referenced. For example, if the uses category in a document based on an existing regulation is left blank, it will be cross-referenced to a document based on a proposed or existing regulation that contains information on relevant chemical uses.

3. SCHEMA OF DATA COMPONENTS AND BASIC RETRIEVAL COMMANDS

The structure of the data base management system, System 2000, is such that a hierarchy of data elements is required to organize and store the information. Each of the data elements in this hierarchy is assigned a component number. All on-line IFIS searches can only be conducted using these numbers. A sample of these component numbers and corresponding component names appears below:

```
DATA BASE NAME IS IFS
DEFINITION NUMBER 1
DATA BASE CYCLE 32
 1*  SUBMISSION-NUMBER
 2*  AUTHORITY
 3*  REGULATION-SECTION
 4*  REGULATION-STATUS
 5*  PRECISION-OF-QUANTIFICATION
 6*  MEDIA
 7*  TECHNOLOGY-TYPES
 8*  DESCRIPTION-LIST
  9*  DESCRIPTION
10*  INDUSTRY-INFORMATION
  11*  INDUSTRY-CODE
  12*  INDUSTRY-SEGMENT
  13*  SUB-SEGMENT-LIST
    14*  SUB-SEGMENT
    15*  SUB-SEGMENT
    24*  CHEMICAL-STATUS-INFORMATION
      25*  CHEMICAL-STATUS
      26*  CHEMICAL-INFORMATION
        27*  CASE-NUMBER
        28*  CHEMICAL-CODE-NUMBER
          29*  CHEMICAL-ELEMENT-CODE
          30*  CHEMICAL-NAME-SEGMENTS
           31*  CHEMICAL-NAME
          32*  CHEMICAL-DESCRIPTOR-LIST
           33*  DESCRIPTOR
          34*  CHEMICAL-USES
           35*  USE-CODE
           36*  USE-NAME
           37*  USE-REFERENCE
           38*  USE-SUBCATEGORIES
            39*  USE-SUBCATEGORY-ID
            40*  USE-TECHNOLOGIES
            41*  REFERENCE-OF-SUBCATEGORY
```

```
16* SIC-CODE-LIST
  17* SIC-CODE
18* SUBCATEOGORY-NUMBER
  19* SUBCATEGORY-NUMBER
  20* SUBCATEGORY
21* CITATIONS
  22* CITATION-TYPE
  23* CITATION-NAME
```

It is impossible for a user to retrieve any data from the IFIS (or any System 2000 data file) without these component numbers. A complete, up-to-date component number list will appear in the IFIS Users Manual.

There are a number of immediate access retrieval commands that can be used to access data from the Industry File Index System. The most frequently used are the "PRINT" and "LIST" commands. The requests would be structured as follows:

Print <something> Where <certain conditions exist>:

List <something> Where <certain conditions exist>:

The <something> is the component number, written in the form C34 (or whatever number corresponds to the item of information desired) and the <certain conditions exist> represents the specifics of the request. For example, if a user wanted to know what industries use the chemical benzene, the request, using the component number schema presented in the beginning of this section, would look like this:

List C11, C12 Where C7 Equals 71432:

(C11 is the component number for the industry code; C12 the industry name and C27 the CAS number. 71432 is the CAS number for benzene.)

The report would look like this:

```
>LI C11, C12 WH C27 EQ 71432:

*    INDUSTRY-CODE   INDUSTRY-SEGMENT
***         29 LEATHER TANNING AND FINISHING INDUSTRY
*           61 SURFACE COATING AND PRINTING INDUSTRY
*           63 TIMBER PRODUCTS
*           28 IRON AND STEEL MANUFACTURING
*           27 INORGANIC CHEMICALS
*           51 RUBBER PROCESSING
---
```

Note that "List," "Where" and "Equal" can be abbreviated. The ":" must always be at the end of the request in order to process it. The print command would look like this:

```
>PR C11, C12, WH C27 EQ 71432:

    11*   29
    12*   LEATHER TANNING AND FINISHING INDUSTRY
    11*   61
    12*   SURFACE COATING AND PRINTING INDUSTRY
    11*   63
    12*   TIMBER PRODUCTS
    11*   28
    12*   IRON AND STEEL MANUFACTURING
    11*   27
    12*   INORGANIC CHEMICALS
    11*   51
    12*   RUBBER PROCESSING
```

The "LIST" command lists data vertically and the "PRINT" command also lists data vertically (and horizontally depending on the request) but includes the component number in the report.

The reports shown here reflect a small percentage of the industries that will ultimately be contained in the data base.

Batch reports for a chemical, industry or regulation will be available. The layout of these reports appear on figures 1-3.

The IFIS Users Manual will describe the retrieval commands in more detail and provide additional examples of their applications.

4. ILLUSTRATIVE USES OF THE INDUSTRY FILE INDEX SYSTEM

Sample queries include but are not limited to:

1. List industries that use cadmium and the uses of cadmium in that industry.

LIST/TITLE (131)/ C11, C12, C35 WH C29 EQ CD:

*	INDUSTRY-CODE	INDUSTRY-SEGMENT	USE-CODE
***			
*	38	OIL AND GAS EXTRACTION	C
*	29	LEATHER TANNING AND FINISHING INDUSTRY	U
*	29	LEATHER TANNING AND FINISHING INDUSTRY	O
*	29	LEATHER TANNING AND FINISHING INDUSTRY	O
*	61	SURFACE COATING AND PRINTING INDUSTRY	C
*	61	SURFACE COATING AND PRINTING INDUSTRY	U
*	10	CEMENT MANUFACTURING	C
*	63	TIMBER PRODUCTS	U
*	46	PHOTOGRAPHIC PROCESSING INDUSTRY	C
*	49	PORCELAIN ENAMELING	O
*	49	PORCELAIN ENAMELING	O
*	28	IRON AND STEEL MANUFACTURING	O
*	28	IRON AND STEEL MANUFACTURING	C
*	28	IRON AND STEEL MANUFACTURING	O
*	28	IRON AND STEEL MANUFACTURING	O

2. Which Chemicals Are Associated With the Iron And Steel Industry? (This Request Was Restricted To Explicitly Regulated Chemicals).

LIST /TITLE (131)/ C6, C25, C27, C31, OB C6, C25 WH C11 EQ 28 AND C25 EQ E:

*	MEDIA	CHEMICAL-STATUS	CAS-NUMBER	CHEMICAL-NAME
***				
*	AIR	E	109	PARTICULATE MATTER
*	SOLID WASTE/ SLUDGES	E	209	EMISSION CONTROL DUSTS SLUDGES
*	SOLID WASTE	E	65996750	SPENT PICKLE LIQUOR
*	SOLID WASTE	E	209	AMMONIA STILL LIME SLUDGE
*	SOLID WASTE	E	89	DECANTER TANK TAR SLUDGE
FROM COKING OPERATIONS				
*	SOLID WASTE	E	7439921	LEAD
*	SOLID WASTE	E	71	CYANIDE
*	SOLID WASTE	E	7440473	CHROMIUM
*	SOLID WASTE	E	7440439	CADMIUM
*	SOLID WASTE	E	91203	NAPHTHALENE
*	SOLID WASTE	E	72	PHENOL/PHENOLICS
*	SOLID WASTE	E	7440382	ARSENIC
*	SURFACE WATER	E	91203	NAPTHALENE
*	SURFACE WATER	E	71432	BENZENE
*	SURFACE WATER	E	195	PH
*	SURFACE WATER	E	72	PHENOLS (4AAP)
*	SURFACE WATER	E	57125	CYANIDE
*	SURFACE WATER	E	50328	BENZO(A)PYRENE
*	SURFACE WATER	E	109	TSS
*	SURFACE WATER	E	7782505	TOTAL RESIDUAL CHLORINE
*	SURFACE WATER	E	7439921	LEAD
*	SURFACE WATER	E	7440666	ZINC
*	SURFACE WATER	E	7440473	CHROMIUM
*	SURFACE WATER	E	7440224	NICKEL
*	SURFACE WATER	E	127184	TETRACHLOROETHYLENE
*	SURFACE WATER	E	7664417	AMMONIA-N
*	SURFACE WATER	E	161	OIL AND GREASE

3. List The Media, Chemical Status, CAS Number and Chemical Names For The Explicitly Regulated Chemicals In The Iron and Steel Industry.

LIST/TITLE (131)/C6, C25, C27, C31, OB C6, C25 WH C11 EQ 28 AND C25 EQ E:

* MEDIA	E	109	PARTICULATE MATTER	
***				
* AIR	E	209	EMISSION CONTROL DUSTS/ SLUDGES	
* SOLID WASTE	E		65996750	SPENT PICKLE LIQUOR
* SOLID WASTE	E		209	AMMONIA STILL LIME SLUDGE
* SOLID WASTE	E		89	DECANTER TANK TAR SLUDGE FROM COKING OPERATIONS
* SOLID WASTE	E		7439921	LEAD
* SOLID WASTE	E		71	CYANIDE
* SOLID WASTE	E		7440473	CHROMIUM
* SOLID WASTE	E		7440439	CADMIUM
* SOLID WASTE	E		91203	NAPHTHALENE
* SOLID WASTE	E		72	PHENOL/PHENOLICS
* SOLID WASTE	E		7440382	ARSENIC
* SURFACE WATER	E		91203	NAPTHALENE
* SURFACE WATER	E		71432	BENZENE
* SURFACE WATER	E		195	PH
* SURFACE WATER	E		72	PHENOLS (4AAP)
* SURFACE WATER	E		57125	CYANIDE
* SURFACE WATER	E		50328	BENZO(A)PYRENE
* SURFACE WATER	E		109	TSS
* SURFACE WATER	E		7782505	TOTAL RESIDUAL CHLORINE
* SURFACE WATER	E		7439921	LEAD
* SURFACE WATER	E		7440666	ZINC
* SURFACE WATER	E		7440473	CHROMIUM
* SURFACE WATER	E		7440224	NICKEL
* SURFACE WATER	E		127184	TETRACHLOROETHYLENE
* SURFACE WATER	E		7664417	AMMONIA-N
* SURFACE WATER	E		161	OIL AND GREASE

5. REQUEST PROCEDURES

The IFIS operates on the EPA Data Processing Services SPERRY UNIVAC 1100/82 Utilizing EXEC Level 36R2D. Users will be able to receive information at the terminal, route the output to a printer from within an interactive run, or initiate a batch standard report from within an interactive run. Procedures for each route will be provided in the Users Manual.

It is necessary that users obtain an account with the UNIVAC staff at Research Triangle Park (RTP) and a password. Users Support in RTP can be contacted at 919-541-3649 or FYS-629-3649. The Project Officer, Daryl Kaufman, is available for questions or computer runs and can be reached at 202-382-3399. The Industry File Index System is expected to be fully operational by the end of August 1983. System updates (e.g., finalized regulations) and maintenance will be an ongoing project.

The Chemical Coordination Staff is currently negotiating with EPA computer specialists about the possibilities of transferring the IFIS to the Chemical Information System (CIS). Until the IFIS is fully accessible on CIS, it will always be available on the UNIVAC through System 2000.

FIGURE 1: U.S. ENVIRONMENTAL PROTECTION AGENCY

INDUSTRY FILE INDEXING SYSTEM

CHEMICAL REPORT*

999999-99-9
BENZENE, ALLOW SIXTY CHARACTERS PER LINE FOR THE CHEMICAL NA
NAME FIELD, LIKE THIS: TY0000568708?VFTYTMNES/'' [-3120VOGYTV
MMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMMM

EXPLICITLY REGULATED IN INDUSTRIES:	NUMBER OF SUBCATEGORIES	TECHNOLOGIES	USES	SUBMISSION
001 COAL MINING, ETC. POINT SOURCE INDUSTRIAL SOMETHING				
CWA: PROPOSED	999	BPT,BAT,PSES,PSNS,NSPS,	P,S,O	001
FIFRA: FINAL	999	BATTTTTTTTTTTTTTTTT	B,C,P,B,C	012
RCRA: INTERIM FINAL	999	MNOP,QRST,XYZ	O	203
RCRA: INTERIM FINAL	999	PSNS	P,C	146
091 GAS FURNACE				
TSCA: FINAL				
CAA: PROPOSED				
021 CANNED AND PRESERVED FRUITS AND VEGETABLES				
FIFRA: FINAL	999	BAT,OTHER TECHNOLOGIES	B,P,T,C,S,O,U	002
TSCA: PROPOSED	999	NSPS	S	039
CWA: FINAL	999	PSES,ETCHBBBBBBBBBBBM	P,S,B,C	068
TOTAL INDUSTRIES: 223				
IMPLICITLY REGULATED IN INDUSTRIES:				
046 LEATHER TANNING AND FINISHING				
CAA: FINAL	999	XXXXXXXXXXXXXXX	P,S,C,B,F,O,U	006
CWA: PROPOSED	999	XXXXX	P	192
052 NONFERROUS METALS				
CWA: PROPOSED	999	NSPS, BPT	S	198
CWA: FINAL	100	BPT,BAT,NSPS,PSNS,PBT,BAT	B,C,P,O	199
053 PETROLEUM REFINING				
ETC.....				
TOTAL INDUSTRIES: 3				
NOT REGULATED IN INDUSTRIES:				
999 ETC, INDUSTRY NAME				
TOTAL INDUSTRIES: 1				
UNKNOWN REGULATION IN INDUSTRIES:				
001 ETC.XXXXXXXXXXXXXXXXX				
TOTAL INDUSTRIES: 1				
TOTAL INDUSTRIES: 17				

*NOTE: Letters and numbers are not exact and are not derived from a bona fide batch report. They are simply printed here as fillers to show users that these fields will contain actual data.

Figure 1

FIGURE 2: U.S. ENVIRONMENTAL PROTECTION AGENCY

INDUSTRY FILE INDEXING SYSTEM

INDUSTRY REPORT*

INDUSTRY: 99 COAL MINING POINT SOURCE XXXXXXXXXXXXXXXXXXXXXXXX SUBMISSION: 999

SUB-SEGMENT: A COAL MINING SUB-SEGMENT.....
.....

REGULATING AUTHORITY: CWA

STATUS: PROPOSED

REGULATED MEDIA: SURFACE WATER.....

SECTIONS: 301,304,306,307,308,501,902...

TECHNOLOGY TYPES: BPT,BCT,BAT,NSPS,PSES

TOTAL NUMBER OF SUBCATEGORIES: 499

PRECISION OF QUANTIFICATION: EMPIRICAL AND ESTIMATED..

DESCRIPTION: COAL MINING POINT SOURCE CATEGORY BNM,.FGHJKLTYOIXCVM HJKL;P
LINE 2 OF DESCRIPTION; TOTAL OF 300 CHARACTERS.//////////////
ETC/., LINE 3.....
WHATEVER//////////////////////??????????????????????????????///
!!!

NUMBER OF CHEMICALS:		USES: P	F	I	B	C	S	O	U	N
REGULATED EXPLICITLY:	999	999	999	999	999	999	999	999	999	999
REGULATED IMPLICITLY:	999	999	999	999	999	999	999	999	999	999
NOT REGULATED:	999	999	999	999	999	999	999	999	999	999
STATUS UNKNOWN:	999	999	999	999	999	999	999	999	999	999
TOTAL:	999	999	999	999	999	999	999	999	999	999

*NOTE: Letters and numbers are not exact and are not derived from a bona fide batch report. They are simply printed here as fillers to show users that these fields will contain actual data.

Figure 2

FIGURE 3: U.S. ENVIRONMENTAL PROTECTION AGENCY

INDUSTRY FILE INDEXING SYSTEM

REGULATION REPORT*

REGULATING AUTHORITY: CWA

STATUS: PROPOSED

REGULATED MEDIA: SURFACE WATER.....

INDUSTRY	TECHNOLOGY TYPES	SECTIONS OF THE ACT	SUBMISSION
35 IRON AND STEEL MANUFACTURING	BPT,NSPS,ETC.....	305,413,ETC.....	12
36 LEATHER TANNING AND FINISHING INDUSTRY	BPT,BCT,BAT,NSPS,PSES,	301,304,306,307,308,501ZZZZZZZ	23
43 MINERAL MINING AND PROCESSING	NSPS,PSES,PSWS,NSPS,PSB,PSNS,	301,302,303,304,305,306,307,81	240
48 ORGANIC CHEMICALS MANUFACTURING INDUSTRY	**********	**********	118
67 STATIONARY INTERNAL COMBUSTION ENGINES	()()()()()()()()()()()()()((((	//////////////////////////////	12
70 SURFACE COATING OF METAL FURNITURE	BPT,_____	999666666666666666666666666666	100

TOTAL NUMBER OF INDUSTRIES: 99

NUMBER OF CHEMICALS

INDUSTRY	.....CHEMICAL STATUS..... B	I	N	O	TOTAL	NUMBER OF SUBCATEGORIES	SUBMISSION
35	12	46	1	0	59	ZZ9	12
36	103	8	102	10	223	ZZ9	23
43	4	32	49	9	94	ZZ9	240
48	562	111	3	106	782	ZZ9	111
67	9	0	7	37	53	ZZ9	12
70	17	5	38	48	108	ZZ9	100
TOTAL:	707	202	200	210	1319	ZZ,ZZ9	

*NOTE: Letters and numbers are not exact and are not derived from a bona fide batch report. They are simply printed here as fillers to show users that these fields will contain actual data.

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Figure 3